Info-Hams Digest   Tue, 7 Sep 93   Volume 93 : Issue 1056

Today's Topics:
                        * SpaceNews 30-Aug-93 *
   rec.radio.amateur.misc Frequently Asked Questions (Part 1 of 3)

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 7 Sep 93 15:14:00 GMT
From: news-mail-gateway@ucsd.edu
Subject: * SpaceNews 30-Aug-93 *
To: info-hams@ucsd.edu

SB NEWS @ AMSAT $SPC0830
* SpaceNews 30-Aug-93 *

BID: $SPC0830

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                              SpaceNews
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                        MONDAY AUGUST 30, 1993

SpaceNews originates at KD2BD in Wall Township, New Jersey, USA. It is
published every week and is made available for unlimited distribution.

* MARS OBSERVER NEWS *
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NASA lost radio contact with its Mars Observer spacecraft on Saturday
August 21, 1993, just days before it was expected to enter into a circular
orbit 400 km above the surface of the planet. Orbit insertion was supposed
to have occured on Tuesday August 24th at about 1:30 PM Pacific Daylight
Time. The spacecraft was expected to begin global surface mapping of Mars
on December 16th that would have lasted an entire Martian year of 687 Earth
days.

Various attempts were made to re-establish contact with the spacecraft, but
so far the Mars Observer has remained silent. NASA engineers believe a
transistor in the satellite's clock failed, rendering the Mars Observer
"brain-dead" and radio silent. It seems improbable that the spacecraft
automatically entered into orbit around Mars, and probably missed its
destination completely.

The Mars Observer was launched on September 25, 1992 on a Titan III rocket
from Cape Canveral Air Force Station, Florida. On July 26, 1993 at 8:52 PM
PDT, the Mars Observer returned its first image of Mars when it was 5.8
million kilometers from the red planet. That image was taken using the
spacecraft's high resolution, narrow angle telescopic camera.

In 1976 an unmanned NASA Viking spacecraft sucessfully photographed the
surface of Mars from an altitude of approximately 1700 kilometers. The
objective of the Viking mission was to search for evidence of intelligent
life on Mars, either now or in the past. Image 35A72 taken by Viking-1 and
received by the Jet Propulsion Lab showed a mile-long, 1500 foot high
humanoid "face" staring into eternity on the surface of Mars. It was later
dismissed without investigation by NASA as a "trick of light and shadow"
and filed away. Frame 70A13 taken over the same area with a higher sun-angle
showed the same feature in addition to a pyramid-like structure approximately
16 kilometers southwest of the "face".

In 1980, Vicent DiPietro and Gregory Molenaar, imaging engineers under
contract to NASA's Goddard Space Flight Center on another project, stumbled
across these Viking images. After further investigation they discovered
folds and horizontal stripes on the "headpiece" or "helmet" of the face
which resembled those of Egyptian Pharaohs, symmetrical cheekbones, an eye
socket, eyeball, and pupil, nose, mouth, and teeth. The facial proportions
were found to be similar to those of early man. DiPietro and Molenaar
published their findings and conclusions in 1980 and were stonewalled by
the planetary science community for doing so.

In a feature article in "Soviet Life" magazine published in 1984, the

Russians revealed their own fascination with the Martian "sphinx" and five-sided pyramids found in the Viking photos.

In an effort to carry out their own investigations, the former USSR launched Phobos I and Phobos II, two unmanned satellites to the planet Mars on July 12, 1988. The reason for launching two craft was for redundancy in case one malfunctioned. Phobos I was lost after it received a bad command during its journey to Mars and fell silent when controllers tried to re-acquire it on the way. Phobos II arrived in January 1989 and entered an orbit around Mars as the first phase towards its real destination, a small Martian moon called Phobos. The mission was flawless until the craft aligned itself with Phobos. On March 28, 1989, an elliptical object was detected to be moving towards the satellite seconds before it failed. All indications were that the elliptical object had collided with the satellite which was now dead and left spinning out of control.

On March 28, 1989 Tass, the official Soviet news agency stated: "Phobos II failed to communicate with Earth as scheduled after completing an operation yesterday around the Martian moon Phobos. Scientists at mission control have been unable to establish stable radio contact."

The next day a top official of the Soviet Space Agency (Glavkosmos) stated: "Phobos II is 99% lost for good." It is important to note that he stated the entire satellite was gone and not that just radio contact was lost with it.

On March 30, 1989 at 4:41 PM EST, the Associated Press released the following statement: "Soviet research centers are now trying to interpret so far 'unexplained optical phonomena' on the pictures of the Martian surface. The pictures show an inigmatic strip 23-25 miles wide and a large spindle-shaped formation."

On March 31, 1989 headlines dispatched by the Moscow correspondents of the European News Agency (EFE) stated: "Phobos 2 Captured Strange Photos of Mars Before Losing Contact With It's Base. Vremya revealed yesterday that the space probe Phobos II, which was orbiting above Mars when Soviet scientists lost contact with it on Monday, had photographed an unidentified object on the Martian surface seconds before losing contact." Scientists described the unidentified object as a thin ellipse 20 kilometers in length. It was further stated that the photos could not be an illusion because they were captured by 2 different color cameras as well as cameras taking infrared shots.

One controller at the Kaliningrad control center concluded that the Phobos II probe was left spinning out of control, a result of being struck or shot. In the October 19, 1989 issue of Nature Magazine, Soviet scientists concluded that the craft could be spinning because it was impacted.

Not since the NASA Viking missions in 1976 has there been a successful
unmanned mission to Mars. NASA's Mars Observer is simply the latest in a
series of spacecraft destined for Mars that failed unexpectedly just prior
to reaching the planet.

The mystery continues.

* ITAMSAT NEWS *
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On Friday August 13th, the Ariane 49 launch vehicle was rolled out of the
assembly building and moved to its launch pad. On Monday August 16th,
the ITAMSAT spacecraft was mated on the ASAP plattform in its final flight
configuration. The bolt cutter and separation spring was installed and the
umblical cable connected to the launch vehicle bus. Due to the uncertainly
of the launch date, the team decided to launch ITAMSAT in an off
configuration with the battery fully charged, but not connected to the
payloads until after separation. Thus no trickle charge is required and on
J-0 a full battery charging will be performed, on J-5 the fairing containing
the ASAP and the Spot-3 will be closed and moved on the top of the Ariane
launcher.

The Ariane launch has been delayed and has now been set for 24-Sep-93.
Further short-term delays are also possible.

[Info via I1ZCT]

* THANKS! *
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Thanks to all those who sent messages of appreciation regarding SpaceNews,
especially:

     K0BJ   I1ZCT   KZ1Z   IW2BSF   OE3ACC   LU7AKC   N7VQO   PS7KM

* FEEDBACK/INPUT WELCOMED *
===========================
Mail to SpaceNews should be directed to the editor (John, KD2BD) via any
of the following paths:

FAX   : 1-908-747-7107
UUCP   : ...catfish.ocpt.ccur.com!ka2qhd!kd2bd
PACKET   : KD2BD @ NN2Z.NJ.USA.NA
INTERNET : kd2bd@ka2qhd.ocpt.ccur.com -or- kd2bd@amsat.org

MAIL   : John A. Magliacane, KD2BD
           Department of Engineering and Technology

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              Advanced Technology Center
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              Lincroft, New Jersey  07738
              U.S.A.


        <<=- SpaceNews: The first amateur newsletter read in space! -=>>

/EX

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John A. Magliacane, KD2BD   * /\/\ * Voice   : 1-908-224-2948
Advanced Technology Center  |/\/\/\| Packet  : KD2BD @ NN2Z.NJ.USA.NA
Brookdale Community College |\/\/\/| Internet: kd2bd@ka2qhd.ocpt.ccur.com
Lincroft, NJ  07738         * \/\/ * Morse   : -.-  -..  ..---  -...  -..
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Rec.radio.amateur.misc Frequently Asked Questions
Part 1 - Introduction to the FAQ and Amateur Radio

This is a regular posting of frequently-asked questions (FAQ) about Amateur
Radio, also known as Ham Radio. It is intended to summarize some common
questions on the rec.radio.amateur.misc newsgroup and Info-Hams mail list
as well as to help beginners get started.

Please provide a copy of the FAQ to any new or soon-to-be Hams you know.

Regular FAQ postings can help save network bandwidth and maintain a good
signal-to-noise ratio in the newsgroup. However, they can't do it alone - you,
the reader, have to use them. If you are a new user, please print and review
the FAQ articles and look at the instructions in the news.announce.newusers
newsgroup before posting any articles. If you are an experienced user, please
help by refraining from answering frequently-asked questions on the newsgroup
if they are already answered by the FAQ articles. Instead, send e-mail to the
user who asked the question. (It will be helpful if you include the part of
the FAQ that answers their question, but not the whole thing.)

The FAQ cannot always prevent people from posting repetitive questions. But
even if hundreds of questions get posted, it saves you from having to answer
them hundreds of times. Also, a friendly pointer to the FAQ in your first
answer can help that person refer to the FAQ in the future. That is when we
can begin to get a real savings of network bandwidth.

To reduce the size of each article, the FAQ information is posted in 3 parts:
Part 1 - Introduction to the FAQ and Amateur Radio
Part 2 - Amateur Radio Organizations, Services, and Information Sources
Part 3 - Amateur Radio Advanced and Technical Questions

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** Are there any news groups for CAP? (11/92)
** What's the name of the QRP club that issues QRP numbers? (9/93)
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** How do I join MARS? (9/93)
** How do I join RACES? (pre-4/92)
** What organizations are available to help handicapped hams? (pre-4/92)
** I am looking for a specific ham, can anyone help me find him? (6/93)
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Part 3 - Amateur Radio Advanced and Technical Questions
** What are the different US amateur classes and what can each of them do?
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** What is the standard for measuring Morse code speed? (pre-4/92)
** What is the standard phonetic alphabet? (new 9/93)
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** What do all those "tones" mean? (pre-4/92)
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** What are these contests I sometimes hear, and how do I participate? (9/93)

** Introduction to the FAQ

  * How to Contribute to the FAQ Articles

  We accept suggestions from the Amateur Radio community. Please
  consider that all new contributions need to be SHORT and concise
  in order to be included. If a contribution is too long, the FAQ
  editors can help you find a more appropriate FTP archive or mail
  server for your article.

  We always accept corrections. Please allow some time (often not
  the next issue of the FAQ) because the FAQ maintainers do this as
  volunteers so each must give higher priority to their employers.

  Send correspondence to hamradio-faq@amdahl.com so that it will
  reach all the FAQ coordinators: (listed in alphabetical order)

  Ed Hare   KA1CV ehare@arrl.org   (Newington, CT, USA)
  Jack GF Hill   W4PPT root@jackatak.raider.net(Brentwood, TN, USA)
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  Rosalie White   WA1STO rwhite@arrl.org   (Newington, CT, USA)
  Derek Wills   AA5BT oo7@astro.as.utexas.edu (Austin, TX, USA)

  * Acknowledgements

  All questions listed as modified "pre-4/92" are entirely Diana
  Carlson KC1SP's work or her editing of a contributor's work. Diana
  established this FAQ and credit is due to her for founding this
  project.

  Thanks to Devon Bowen KA2NRC for accepting this FAQ in e-mail every
  month to keep the FTP archive at ftp.cs.buffalo.edu up-to-date.

  * Notes on "Netiquette"

  The rec.radio.amateur.misc newsgroup and Info-Hams mail list have a
  large daily volume of traffic. They can operate more efficiently if
  the following netiquette guidelines are followed. Please take them
  seriously.
  * If you are new to UseNet, the introductory articles in
    news.announce.newusers are required reading. Go to that newsgroup
    now. Definitely, read the instructions there before posting
    anything. Other rec.radio.amateur.* readers will appreciate it!
  * Pick the right newsgroup. Use only the most specific newsgroup

for your subject. For example, a question about a homebrew antenna
only needs to be posted to rec.radio.amateur.antenna. Also, don't
post to rec.radio.amateur.misc when the subject can go in another
rec.radio.amateur.* newsgroup. So, when there is a more specific
newsgroup, that's the one you want.

* When posting a followup article, ALWAYS try to minimize the number
  of lines of quoted material from the original article.

* As a general rule when you try to determine whether to reply to
  someone by e-mail or with a followup article, remember to "praise in
  public, criticize in private." It's OK to disagree technically but
  be careful not to attack the person with whom you disagree. Also,
  be careful with your use of the word "you" when posting a follow-up
  article. Many unnecessary flame wars have started that way.

* Use a descriptive subject. For example, a message subject of "Ham
  Radio" tells the reader NOTHING about the contents of your article
  since the whole newsgroup is about Ham Radio. Other examples of
  subjects which are so broad that they become useless could include,
  "Help," "A Question," "Antennas," or "Frequencies." Maybe "Books on
  Antennas?" or "Where can I find Repeater Frequencies?" would be
  better, for example. Remember, in a busy newsgroup a lot of users
  decide which articles to read from the subject line alone. If you
  post, don't deprive yourself of an audience!

* Before answering a question, check if the FAQ adequately answers it
  or if someone else already answered it. If you have more to add,
  make sure to reference either the FAQ or the related articles.

* If a user posts a question which is directly answered by the FAQ,
  there is no need to post an answer - the information is already
  available on the newsgroup. Instead, just send an e-mail message
  which politely explains where to find the FAQ. They will probably
  appreciate it if you include the answer to their question. (Don't
  send a "nastygram" - that would just discourage future participa-
  tion.)

* Pay attention to the size of your audience - use the "Distribution:"
  header. If you leave it blank, your message will go to every civ-
  ilized country in the world and occupy disk space in all news sys-
  tems in all those places. If that's what you intend, that's fine
  but make sure your article is relevant outside your country. (In
  particular, Hams should already know there is more to the world than
  just their own country.)

* If you have an item for sale, please limit the distribution area so
  that, for example, an article about a radio for sale in New Jersey
  won't get to California or Europe. If you wish, you may cross-post
  your for-sale article to rec.radio.swap.

* Software sources should be posted to either alt.sources,
  comp.sources.misc, or comp.sources.* for a specific machine type.
  Software binaries should be posted to the appropriate subgroup of
  comp.binaries.

** What is Amateur Radio?
    Amateur Radio is a non-commercial radio communication service whose
    primary aims are public service, technical training and experimenta-
    tion, and communication between private persons. Amateur Radio opera-
    tors are commonly called hams. Hams often communicate with each other
    recreationally but also provide communications for others at public
    events or in times of emergency or disaster.

** Who can become a ham?
    The answer to this question differs in every country.

    The answer for the USA is listed below. If your country has
    a newsgroup specifically for it (i.e. UK, Australia, Germany)
    the most accurate answers can be found there. See Part 2 for
    the list of region-specific newsgroups.

    If that doesn't help, the American Radio Relay League (ARRL)
    may be able to help because they communicate with similar
    organizations in other countries, probably including yours.
    They can be reached by electronic mail or surface mail (see
    Part 2.)

    In the USA, anyone who is not a representative of a foreign
    government can be an Amateur Radio operator. There are tests
    that you must pass to get a license, however the tests are not
    insurmountable. On that general level, the requirements are
    probably similar in almost every country.

    For more information on becoming a Ham in the USA, the ARRL
    has a toll-free number where you can request information:
    1-800-32-NEW-HAM (don't worry about the number being one digit
    too long - the phone system ignores it.) Other information
    can also be obtained from the ARRL e-mail information server in
    the file called PROSPECT. Details on the server are in Part 2.

** Where can I locate information and books on Amateur Radio?
    Your local Radio Shack sells some ham radios and Amateur Radio
    license books. Books can also be obtained through the mail
    from ham radio organizations, such as ARRL in Newington, CT
    (203-666-1541) and W5YI in Dallas, TX (1-800-669-9594). There
    may be one or two ham radio stores in the local area (ie,
    within 50 miles). Try looking in the Yellow Pages under Radio
    Communications.

    For the Novice license, get a Novice License manual, plus 5-word-per-
    minute Morse code tapes, costing around $25. For the Technician lic-
    ense, get a combined Novice and Technician License manual, and an FCC
    Rules manual, costing around $32. The FCC Rules manual is a good idea

for Novice also, but not necessary, since the Novice License manual
contains all the FCC Rules that are required for the Novice License.

The ARRL Education Activities Department has several programs to
help amateurs (or prospective amateurs) to get started. Ask for a
"New prospect package" available free of charge, from ARRL HQ,
Educational Activities Department, 225 Main St, Newington, CT 06111.

Information on Ham Radio can also be obtained with your computer.
Part 2 of this FAQ contains a significant amount of material on
that subject.

** How much does it cost?
    To take the Novice tests, it's free. To take the Technician or
    higher class tests, there is a small charge (around $5-$6 currently)
    to cover copying costs and running the testing sessions. The cost
    of a radio is really dependent on what you want to do. You can
    make your own radio and antenna for under $150. You can buy a used
    single-band radio for $150-$300. Or you can buy a new multi-band
    multi-mode radio with all the doodads for $300-$3000. I'd suggest
    you learn more about ham radio, talk to local hams, find out what
    you want to do with ham radio first.

** Where can I take the tests?
    The Novice tests can be given by any two qualified hams of General
    class license or above. The Technician tests and all higher class
    license tests are given by three qualified Volunteer Examiners (VEs)
    who volunteer their time.

    To locate an ARRL testing session in your area, you can contact
    ARRL at 203-666-1541 x282.

    See also the section "Where can I find VE sessions in my local area?"
    in Part 2 because more information is available via UseNet.

** What are the tests like?
    First off, come prepared to VE sessions. Bring: TWO forms of ID,
    one of which has a picture on it; a calculator (if necessary); a pen
    and two pencils; the applicable examination fee (around $5-$6 for
    1993); the original AND a copy of your current Amateur Radio license
    (if you have one); the original AND a copy of any CSCEs for tests
    you've already passed (if you have any).

    Each of the written tests (Novice, Technician, General, Advanced,
    and Extra) are generally a multiple choice test of approximately one-
    tenth of the question pool. For example, if the question pool is
    approximately 300 questions, then the test will be a 30-question
    test. You need to get 75% correct to pass. Note that they truncate

to determine the correct number of questions. That means for a 30
question test, you need to get 22 right, which is actually only 73.3%.

Once you've paid the small fee for Technician-Extra tests, it costs
no extra to take another test, so I'd suggest you keep taking the
next more advanced test until you fail. If you pass the written
but not the Morse code (or vice versa) for a specific class license,
you have up to one year to take the other test before you would have
to retake the written test again. Note that some VEs will not allow
you to take the written test unless you've first taken the Morse code
test.

The Morse code test is a receiving test only. The test run 5 to 7
minutes. After the test, you are given a 10-question multiple-choice
or fill-in-the-blank test. Passing grade is 7 or more. If you fail
the 10-question test, the examiner team will examine your copy sheet
to see if you have 1 minute of solid copy with no errors. For 5 wpm,
that's 25 characters, for 13 wpm, that's 65 characters, for 20 wpm,
that's 100 characters. If they can find 1 minute solid copy, you've
still passed.

Hints on Morse code tests: Generally, it will be a standard QSO
(conversation), and it MUST contain at least one of each of the
following:
26 letters A-Z, 10 numbers 0-9, comma (,), period (.), slant or
slash (/), question mark (?), double dash prosign (BT), end of
message prosign (AR), end of contact prosign (SK).
The letters count as one character, all others count as two
characters. There are a couple other prosigns which are worth
knowing, but will not be on the test, like "I'm done talking, next"
is K, "I'm done talking, back to you" is KN, "Please wait" is AS.

**   What can I do with a ham radio license?
      There are so many things, it's a difficult question to answer, but
      here's some ideas:
      * Talk to people in foreign countries.
      * Talk to people (both local and far away) on your drive to work.
      * Help in emergencies by providing communications.
      * Provide communications in parades or walkathons.
      * Help other people become hams.
      * Hook your computer to your radio and communicate by computers.
      * Collect QSL cards (cards from other hams) from all over the
        United States and foreign countries and receive awards.
      * Participate in contests or Field Day events.
      * Provide radio services to your local Civil Defense organization
        thru ARES (Amateur Radio Emergency Service) or RACES (Radio Amateur
        Civil Emergency Service).
      * Aid members of the US military by joining MARS (Military Affiliate

Radio System).
    * Participate in transmitter hunt games and maybe build your own
      direction-finding equipment.
    * Have someone to talk to on those sleepless nights at home.
    * Receive weather pictures via satellites.
    * Build radios, antennas, learn some electronics and radio theory.
    * Talk to astronauts in space, or use the moon to bounce signals
      back to people on the Earth.
    * Experiment with Amateur TV (ATV), Slow-Scan TV (SSTV), or send
      still-frame pictures by facsimile.
    * Experiment with amateur satellite communications.

** What can't I do with an Amateur Radio license?
    The most important thing you can't do is transact business of any
    kind over ham radio. Interference to other hams or services, as
    well as obscene, profane or indecent language is not tolerated and
    is illegal. Music and broadcasting are not allowed on ham radio.
    Some personal conversations may not be appropriate to Amateur Radio.
    Do you really want the whole world to hear about Aunt Mabel's
    hemorrhoids?

** I'm interested, who will help me?
    There are hams who are willing to become "Elmers" (mentors, helpers)
    in your local area. Look around and ask local hams. Search out local
    radio clubs. As well, some people have volunteered to be an Elmer
    over the Usenet. A list of UseNet Elmers and their e-mail addresses
    is posted to the newsgroup monthly. If anyone wants to be an Elmer,
    send e-mail to
          elmers-request@unomaha.edu

    There is also a lot to be said for exploring on your own. Take a
    look around the FTP archives and e-mail servers listed in Part 2.
    There's so much out there on UseNet, you'll find plenty of things
    you're interested in.

** Should I build my own equipment or antenna?
    [see also rec.radio.amateur.homebrew and rec.radio.amateur.antenna]
    "Homebrewing" is a fun and educational part of ham radio. It is a
    thrill to build your own transmitter and put it on the air. However,
    building your own receiver can be quite complicated; if you don't have
    electronics experience, you may want to buy a receiver instead. Most
    homebrew transmitters are QRP (transmit very low power). That's fine
    for an experienced ham with a very good antenna, but a Novice ham will
    just get frustrated. Your first rig, therefore should NOT be a home-
    brew.

    Antennas can be much simpler projects than the transceiver, though
    some types are also quite involved. Most hams build their own anten-

nas for base station use and buy antennas for mobile (car) use. Most
beginner ham books describe how to build different types of antennas.
Order of difficulty, from easiest to more difficult, for some common
antennas are: wire dipole, Zepp, Yagi, Quad, and Log-Periodic. Books
from many sources, including ARRL and several Hams, discuss antennas
in depth.

When building or even understanding antennas, it is good to know the
relationship between the antenna element length and the frequency or
wavelength it is designed for. An antenna performs best at multiples
of 1/4 of that wavelength, though 5/8 wave also has beneficial qualit-
ies. The wavelength is related to the frequency with the following
formula:

wavelength (in meters) = 300 / frequency (in megahertz)

You do not need a huge antenna or tower like ones you may see around
your neighborhood. Large beam antennas and 40-foot towers are very
expensive. As a beginner, a simple dipole antenna is perfectly
adequate. As you gain experience (and money :-), you may want to
invest in something bigger.

If you can afford new rigs and antennas, there are many mail order
stores that advertise in ham radio magazines. If you want to buy a
used rig, the best place is at a "hamfest" (ham flea market). You
should take along an experienced ham, since some of the used equipment
may be inoperative, overpriced or poor quality. You can also answer
ads in ham magazines or posted at ham radio stores, although often, by
the time you call, the equipment has already been sold.

End of Info-Hams Digest V93 #1056
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